Evidence-Based Women's Health Society

PROFESSIONAL DIPLOMA IN REPRODUCTIVE MEDICINE AND ASSISTED REPRODUCTIVE TECHNIQUES

Blended Learning Curriculum

The Evidence-Based Women's Health Society
Birmingham's Women's Hospital
Princess Fatma Academy, MOHP

2024



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PROGRAM STAKEHOLDERS

This program is a product of the cooperation between:

- The Evidence-Based Women's Health Society.
- Birmingham's Women's Hospital.
- Princess Fatma Academy, MOHP

SUPERVISING COMMITTEE

The program is supervised and directed by a committee of highly professional professors in reproductive medicine and medical education.

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TABLE OF CONTENTS

Mission 1
Rational Statement 1
Program Development 1
Program Outlines 2
Methods of Teaching 4
Training Rules & Regulations 5
Certification 5
Intended Learning Outcomes (ILOs) 6
Program Module I: Basic Infertility and Reproductive Endocrinology. 7
I.1. Female Reproductive Endocrinology 7
I.2. Infertility Basics 9
I.3. Anovulation and PCOS 11
I.4. Other Causes of Infertility and Related Disorders 12
I.5. Recurrent Pregnancy Loss 14
Program Module II: IVF and Assisted Conception 15
Program Module III: Evidence-Based Practice 18
Program Module IV: Endoscopy and Reproductive Surgery 20
Detailed Teaching and Learning Plan 22
Program Module I: Basic Infertility and Reproductive Endocrinology 23
I.1. Female Reproductive Endocrinology 23
I.2. Infertility Basics 23
I.3. Anovulation and PCOS 24
I.4. Other Causes of Infertility and Related Disorders 24
I.5. Recurrent Pregnancy Loss 24
Program Module II: IVF and Assisted Conception 25
Program Module III: Evidence-Based Practice 26
Program Module IV: Endoscopy and Reproductive Surgery 26
Assessment 27
I- Trainees Assessment 28
II-Program Assessment 30

Mission

"To qualify a professional infertility specialist with up to date knowledge and essential skills for the safe management of infertility related problems."

Rational Statement

Reproductive Medicine and assisted reproductive techniques are expanding progressively and witnessing rapid changes and development in diagnostic tools, strategic approaches and optimum methods of treatment.

In Egypt, there are very few opportunities for gynecologists, if any, to acquire the necessary updated knowledge and training in this very fine, widely needed, and fast growing subspecialty.

The purpose of this training program is to arm gynecologists with the required evidence based knowledge, skills and ethical communication capabilities that must be gained by practitioners of reproductive medicine and assisted reproduction in order to practice independently and safely.

Program Development

This program will serve as a part of the continuing professional development for gynecology specialists. It is organized with support from Birmingham Women's Hospital which provided expert consultation in the program development and will provide supervision, accreditation and assessment of trainees to ensure high quality training and education.

To ensure that the program reflects the most up to date guidelines for practice of reproductive medicine, the contents of this program has been prepared in accordance with:

- The Royal college of Obstetricians and Gynecologists (RCOG) subspecialty training curriculum (Advanced Training Skills Module - ATSM) in Reproductive Medicine
- The American Society of Reproductive Medicine (ASRM) guidelines for postgraduate training in Reproductive Medicine

Program Outlines

General Scope

Reproductive medicine focusing on the prevention, diagnosis and treatment of different infertility problems by educational, medical, surgical, and laboratory methods with special emphasis on assisted reproductive techniques.

Eligibility

Graduates of medical school with at least 2 year of full time residency as a gynecology resident and completion of a specialist degree in Obstetrics and Gynecology (Diploma, Mastership, Egyptian fellowship, MRCOG, MD or equivalent)

Personnel and Resources

Participating faculty members are staff members from faculties of medicine of the Egyptian Universities all over Egypt.

Duration of the Program

- One year

Program Modules

The program is composed of four modules:

I. Basic Infertility and Reproductive Endocrinology. It is subdivided into:

- I.1 Female Reproductive Endocrinology
- I.2 Infertility Basics
- I.3 Anovulation and PCOS
- I.4 Other Causes and Related Disorders
- I.5 Recurrent Pregnancy Loss

II. IVF and Assisted Conception

III. Basics of Evidence-Based Practice and Guidelines in Reproductive Health

IV. Endoscopy and Reproductive Surgery

Program Layout:

The program teaching and training is divided into:

1- Along the year, once weekly activity including:
   a. 56 Lectures in an ***interactive online virtual classroom*** (L)
   b. 10 sessions of Clinical Case Discussion (CD) in Cairo that include case scenarios, case presentations, problem solving, and discussions and training on Evidence-Based Medicine.
   c. 5 Days of Workshops (WS) that include 2 days hands-on training on infertility procedures on simulators, 1-day ultrasound in infertility workshop and 2 days endoscopy workshop.
   d. Assessment (A) tests after each module.

2- ***Three months*** of training in an accredited Assisted Reproduction (AR) unit that provides IVF/ICSI services in the country of residence ***OR***
One month of ***condensed training*** in an accredited AR unit that provides IVF/ICSI services in Egypt.

Important for Overseas Trainees

Trainees who reside in countries other than Egypt will be required to:

1- Attend the lectures and clinical case discussion once weekly over the internet. They should have a working internet connection with a bandwidth of 4MB/sec at least.
2- Have a clinical attachment for 3 months to an accredited IVF/ICSI unit in the country of residence. The ARTs unit must send a letter seeking accreditation by the board of the diploma and respond to all the requirements of the board for accreditation such as the center equipment and facilities, average number of cases and qualifications of trainer(s). In the letter, the ARTs unit director must clearly state his/her commitment to training according to the logbook that will be signed and stamped by the trainer and the unit director.
3- Come to Egypt **at least twice** during the training period for the following activities.
   a. One month of condensed **training in an accredited ARTs unit** in Egypt defined by the board if training is not available in the country of residence.
   b. Attend all the **3 workshops and clinical case discussions**.
   c. To sit for the final exam.

Methods of Teaching & Learning

The following methods of teaching and learning will be applied all through the program

Lectures:

- Online interactive virtual classroom lectures using PowerPoint presentations.
- Lecturer notes will be used all through the program.
- Lectures will be on Fridays
- Lecture weeks will include 1-2 lecture with a total of 1-2 hours every week.

Clinical Case Discussions:

- Will be attended in Cairo during the month of training.
- In these sessions, candidates will be trained under lecturer supervision on history taking, identification of the clinical signs and reading investigations in patients with infertility problems.
- Clinical scenarios are discussed.

Clinical Attachment to an AR Unit:

- Every trainee will be offered a clinical attachment period to an accredited AR unit.
- Attendance in the unit is for a minimum 3 days a week (if training is for 3 months in the country of residence) or 6 days in a week if condensed training in Egypt for a month) as an **OBSERVER**.
- Every trainee will be handled a logbook that they have to fulfill during their clinical attachment period.
- This clinical attachment allows trainees to get a first-hand experience in dealing with patients, different induction protocols, and techniques and procedures used in assisted reproduction.
- Training in the AR unit is for a period of one (condensed) or 3 months.

Interactive and Hands-on Training Workshops:

- Workshops will be organized, in Cairo, for hands-on training on models and simulators in:
    - Assisted reproductive techniques (ovum pickup & embryo transfer)
    - Ultrasonography, and Hysterosalpingography
    - Endoscopy

Self-Learning:

- Candidates will be guided by a list of recommended readings and lectures' notes. To help them improve their knowledge and understanding.

Training Rules & Regulations

To sit for the final exam, the candidate must **fulfill** the following training and educational activities and requirements:

1- Attending **at least 70% of the online lectures and clinical case discussions (in Cairo)**.
2- Attend the three workshops (US, OP & ET and Endoscopy)
3- 1 condensed OR 3 months of clinical attachment to an AR unit assigned to him by the supervising committee.
4- Passing the end of modules exam with a 60% score at least.
5- Fulfillment of the logbook.

CERTIFICATION

Two types of certificates will be awarded to trainees:

1- A Paper Certificate of Attendance:
This ***can be*** awarded for trainees who completed their attendance as per the regulations of attendance and passed the end of modules exams but did not pass the final exams. This certificate will be signed by the Evidence-Based Women's Health Society.

This certificate is not a replacement for the certificate of successful completion of the Diploma that requires passing the whole assessment exams

2- The professional diploma certificate:
One final certificate for those who successfully completed the diploma and fulfilled all the exams and got the required scores.

This certificate is a form of continuous professional development, training and improving practice skills and knowledge in the area of reproductive health and assisted reproductive techniques and assisted conception

Intended Learning Outcomes (ILOs)

Program Module I
Basic Infertility and Reproductive Endocrinology

I.1. Female Reproductive Endocrinology

Module I.1: This part of the module deals with normal as well as abnormal endocrinological development of the female child and adolescent and premature ovarian insufficiency including hormone replacement therapy (HRT).

KNOWLEDGE (K.I.1)

By the end of this module all candidates should be able to describe and discuss:

K.I.1.1	Female reproductive endocrinology: neuroendocrine anatomy and physiology of normal menstruation and hypothalamic–pituitary dysfunction
K.I.1.2	Hypogonadotrophic hypogonadism and Kallmann syndrome
K.I.1.3	Hyperprolactinemia and pituitary adenoma
K.I.1.4	Disorders of growth hormone
K.I.1.5	Thyroid disorders
K.I.1.6	Adrenal dysfunction: Congenital Adrenal hyperplasia, Cushing syndrome, Nelson syndrome and Addison's disease
K.I.1.7	Obesity and infertility, ART and management of obesity, including understanding of long-term health risks, metabolic effects and cancer risks.
K.I.1.8	Premature menopause & premature ovarian insufficiency including congenital causes (e.g. Turner syndrome, complete androgen insensitivity syndrome, ovarian agenesis, polyglandular Endocrinopathy and fragile X syndrome) & acquired causes (e.g. postsurgery, chemo/radiotherapy) and resistant ovary syndrome
K.I.1.9	Diagnostic and therapeutic approach to patients with premature menopause
K.I.1.10	Treatment options for young women with ovarian failure, with particular regard to future fertility, choice of hormone replacement therapy (HRT), advantages, disadvantages, adverse effects, risks and benefits of HRT.

INTELLECTUAL & CLINICAL SKILLS (ICS.I.1)

By the end of this module all candidates should be able to:

ICS.I.1.1	Identify the causes of various endocrinological disorders like hypothalamic, pituitary, thyroid and adrenal disorders and congenital adrenal hyperplasia.
ICS.I.1.2	Interpret various diagnostic tests for the detection of endocrinological abnormalities.
ICS.I.1.3	Formulate a management plan for a woman with an endocrinological abnormality
ICS.I.1.4	Investigate and interpret tests for a woman with hyperprolactinemia
ICS.I.1.5	Take a history for a woman with premature ovarian insufficiency or premature menopause

ICS.I.1.6	Organize appropriate investigations and interpret them for a case with premature ovarian insufficiency or premature menopause
ICS.I.1.7	Formulate a management plan for a woman with premature ovarian insufficiency or premature menopause
ICS.I.1.8	Use HRT properly when indicated, minimize its risks and manage its complications.

PROFESSIONAL ATTITUDE (PA.I.1)

All candidates should be able to:

PA.I.1.1	Respect patient confidentiality
PA.I.1.2	Counsel patients sensitively about the probable causes of their problems
PA.I.1.3	Counsel patients sensitively and explain clearly and openly about various treatment options, complications and adverse effects of various treatments of their condition
PA.I.1.4	Liaise with colleagues in other disciplines e.g. endocrinologists

I.2. Infertility Basics

Module I.2: This part of the module deals with an overview of infertility problem, its causes, diagnostic plans and tests for diagnosis including the use of abdominal and transvaginal ultrasound in infertility assessment.

KNOWLEDGE (K.I.2)

By the end of this module all candidates should be able to describe and discuss:

K.I.2.1	The scientific basis related to general infertility problems
K.I.2.2	The diagnostic approach to an infertile couple
K.I.2.3	Various tests used in the assessment of infertility hormonal assays, semen analysis, HSG, sonohysterography, sella turcica imaging by MRI and CT scan, arteriography, , Intravenous and retrograde urography and Isotope imaging methods
K.I.2.4	The different treatment options for infertility problems
K.I.2.5	Basics of ultrasound: Sound waves, interaction of waves with tissues, transducers, resolution, display, energy output measurement, safety, guidelines for clinical use
K.I.2.6	The use of abdominal and transvaginal ultrasound in infertility assessment including: ▪ Appearance of normal and abnormal uterus with fibroids ▪ Endometrial assessment: normal and abnormal endometrium and uterine cavity including polyps, cyclical changes, changes associated with hormone replacement, hyperplasia and malignancy ▪ Ovarian, para-ovarian and tubal masses. Performing and interpreting follicular tracking, including the disappearance of corpus luteum and LUF.

INTELLECTUAL & CLINICAL SKILLS (ICS.I.2)

By the end of this module all candidates should be able to:

ICS.I.2.1	Take a history for an infertile couple
ICS.I.2.2	Perform appropriate clinical examination
ICS.I.2.3	Interpret and describe limitations of hysterosalpingography
ICS.I.2.4	Interpret and describe limitations of sonohysterography
ICS.I.2.5	Interpret and describe limitations of HyCoSy test
ICS.I.2.6	Interpret and describe limitations of Chromosomal studies and karyotyping
ICS.I.2.7	Evaluate other diagnostic procedures used in infertility diagnosis
ICS.I.2.8	Choose and formulate an appropriate plan of management and modify if necessary
ICS.I.2.9	Form appropriate management plan including endocrine and gonadotrophin therapies
ICS.I.2.10	Use both transvaginal and abdominal ultrasound in infertility assessment.

PROFESSIONAL ATTITUDE (PA.I.2)

All candidates should be able to:

PA.I.2.1	Respect patient confidentiality
PA.I.2.2	Counsel patients sensitively about the probable causes of their problems
PA.I.2.3	Counsel patients sensitively and explain clearly and openly about various treatment options, complications and adverse effects of various treatments of their condition
PA.I.2.4	Liaise with colleagues in other disciplines (e.g. andrologists, endocrinologists, IVF team and urologists)

I.3. Anovulation and PCOS

Module I.3: This part of the module deals with causes of Anovulation and Polycystic Ovary Syndrome (PCOS).

KNOWLEDGE (K.I.3)

By the end of this module all candidates should be able to describe and discuss:

K.I.3.1	Causes and pathogenesis of anovulation
K.I.3.2	Insulin resistance and the metabolic syndrome
K.I.3.3	Presentations, symptoms and signs of anovulation
K.I.3.4	Various diagnostic tests for anovulation
K.I.3.5	Management of anovulatory infertility in the outpatient clinic
K.I.3.6	Protocols for induction of ovulation (diet, clomiphene, metformin, gonadotrophins and aromatase inhibitors).
K.I.3.7	Prevention and treatment of OHSS
K.I.3.8	The role, technique, pros and cons of laparoscopic ovarian drilling in the treatment of anovulation
K.I.3.9	Investigations of impaired glucose tolerance and the use of insulin lowering drugs

INTELLECTUAL & CLINICAL SKILLS (ICS.I.3)

By the end of this module all candidates should be able to:

ICS.I.3.1	Organize the appropriate endocrine investigation of disordered ovulation
ICS.I.3.2	Select and manage appropriate treatment for PCOS
ICS.I.3.3	Prescribe and monitor response to clomiphene citrate, metformin and gonadotrophin ovulation induction

PROFESSIONAL ATTITUDE (PA.I.3)

All candidates should be able to:

PA.I.3.1	Respect patient confidentiality
PA.I.3.2	Counsel patients sensitively about the probable causes of their problems
PA.I.3.3	Counsel patients sensitively and explain clearly and openly about various treatment options, complications and adverse effects of various treatments of their condition

I.4. Other Causes of Infertility and Related Disorders

Module I.4: This part of the module deals with all of the other causes of infertility (tubal, endometrial, cervical and male factors) as well as related disorders as endometriosis and hyperandrogenism.

KNOWLEDGE (K.I.4)

By the end of this module all candidates should be able to describe and discuss:

K.I.4.1	Tubal, Uterine, and cervical factors of infertility
K.I.4.2	Unexplained infertility: Definition, probable causes, diagnosis and management
K.I.4.3	Spermatogenesis and its hormonal control and causes of male infertility
K.I.4.4	Diagnosis and management of male infertility problems including semen analysis, medical and surgical treatment (ligation of varicocele, percutaneous and microsurgical epididymal sperm aspiration and testicular biopsy)
K.I.4.5	Pathogenesis and etiology of endometriosis
K.I.4.6	Effect of endometriosis on fertility and mechanisms by which minimal and mild endometriosis may impair fertility, e.g. defective folliculogenesis, ovulatory dysfunction, hyperprolactinemia, autoimmune disorders, disturbances in the peritoneal fluid environment.
K.I.4.7	Presentations, diagnosis, staging and prognosis of endometriosis
K.I.4.8	Expectant management and medical treatment of endometriosis (progestogen therapy, combined oral contraceptive pills, and GnRH analogues)
K.I.4.9	Surgical treatment of endometriosis (diathermy to superficial disease, excision of endometriosis, removal of endometriomas, treatment of rectovaginal disease.
K.I.4.10	Place of assisted reproduction in the management of endometriosis
K.I.4.11	Pain management in endometriosis
K.I.4.12	Fibroids and infertility: Effect of fibroid on infertility, assessment of its effect on fertility and treatment of fibroid in an infertile woman
K.I.4.13	Causes, pathogenesis manifestations, diagnosis and management of hirsutism and hyperandrogenism

INTELLECTUAL & CLINICAL SKILLS (ICS.I.4)

By the end of this module all candidates should be able to:

ICS.I.4.1	Take a history for an infertile woman
ICS.I.4.2	Perform appropriate clinical examination
ICS.I.4.3	Interpret different investigations
ICS.I.4.4	Choose and formulate an appropriate plan of management and modify if necessary
ICS.I.4.5	Take an appropriate history from an infertile man
ICS.I.4.6	Arrange for and interpret investigations as semen analysis, male endocrine profile and investigations for azoospermia
ICS.I.4.7	Form appropriate management plan (endocrine or gonadotrophin therapy)

ICS.I.4.8	Diagnose endometriosis by history, clinical examination and investigations
ICS.I.4.9	Perform staging of endometriosis
ICS.I.4.10	Arrange a treatment plan for endometriosis based on the presentation of the disease (infertility, pain, menstrual disorders)
ICS.I.4.11	Assess the patient with hyperandrogenism
ICS.I.4.12	Investigate a patient with hyperandrogenism
ICS.I.4.13	Choose and apply the proper treatment modality of hyperandrogenism according to the etiology and presentation.

PROFESSIONAL ATTITUDE (PA.I.4)

All candidates should be able to:

PA.I.4.1	Respect patient confidentiality
PA.I.4.2	Counsel patients sensitively about the probable causes of their problems
PA.I.4.3	Counsel patients sensitively and explain clearly and openly about various treatment options, complications and adverse effects of various treatments of their condition
PA.I.4.4	Liaise with colleagues in other disciplines e.g. andrologists
PA.I.4.5	Counsel about sperm banking: pre-oncology treatment and before vasectomy

I.5. Recurrent Pregnancy Loss

Module I.5: This part of the module deals with causes, diagnosis and management of women with recurrent pregnancy loss.

KNOWLEDGE (K.I.5)

By the end of this module all candidates should be able to describe and discuss:

K.I.5.1	Causes of recurrent pregnancy loss
K.I.5.2	Investigations to diagnose the cause including imaging techniques, karyotyping, endocrine assessment and immunological assessment
K.I.5.3	Various treatment options including treatment of Antiphospholipid syndrome And Uterine abnormalities
K.I.5.4	The role of ultrasound in the diagnosis of early pregnancy, assessment of gestational age, diagnosis of ectopic pregnancy, GTD and assessment of cervical length.

INTELLECTUAL & CLINICAL SKILLS (ICS)

By the end of this module all candidates should be able to:

ICS.I.5.1	Take a history for a woman with recurrent pregnancy loss
ICS.I.5.2	Organize appropriate investigations for a case with recurrent pregnancy loss
ICS.I.5.3	Interpret tests and investigations for recurrent pregnancy loss
ICS.I.5.4	Formulate a management plan for a woman with recurrent pregnancy loss

PROFESSIONAL ATTITUDE (PA)

All candidates should be able to:

PA.I.5.1	Respect patient confidentiality
PA.I.5.2	Counsel patients sensitively about the treatment options available.
PA.I.5.3	Explain clearly and openly about various treatment options, complications and adverse effects of various treatments

Program Module II
IVF and Assisted Conception

Module II: This module deals with the different indications, techniques, methodology as well as complications of various assisted reproductive techniques (ART). It also deals with patient selection, preparation and follow-up and the ethical and legal aspects of ART

KNOWLEDGE (K.II)

By the end of this module all candidates should be able to describe and discuss:

K.II.1	Types of counselling and consent in the management of the infertile couple: Educational, decision making, supportive, crisis and therapeutic counselling.
K.II.2	Counselling for particular issues (Failure to get pregnant or pregnancy loss after treatment, multiple pregnancy, PGD & PGS, Fertility preservation).
K.II.3	Patient's selection: the different indications of ART, clinical prognostic factors (female age, duration of infertility, ovarian reserve, past reproductive history, pelvic organ abnormalities), limitations and ethical and legal aspects of ART
K.II.4	Investigations and preparation of patients for assisted reproduction: hydrosalpinx, fibroids, HIV, Hepatitis B and C screening.
K.II.5	Ovarian stimulation: the scientific basis of follicular development and the role and control of gonadotrophins and the pharmacology of different agents used for ovarian stimulations.
K.II.6	Down regulation before ART: indications, drugs used (COC pills, GnRH agonists, GnRH antagonists),
K.II.7	Ovulatory triggers (timing, urinary and recombinant HCG, GnRH-agonists) and coasting for the prevention of OHSS
K.II.8	Stimulation protocols I: 1) long GnRH stimulation protocol, 2) short GnRH stimulation protocol.
K.II.9	Stimulation protocols II: GnRH antagonist cycles Shanghai Protocol, Progestin primed ovarian stimulation
K.II.10	Natural cycle ART: Indications, technique, pros and cons and success rates. Other Protocols for frozen – thawed embryo transfer.
K.II.11	Luteal support: rational for luteal phase support, duration, and different agents used and their routes of administration.
K.II.12	High order multiple pregnancy: psychological, physical and economic impact, possible preventive measures and available management options including heterotropic and ectopic pregnancy with broad understanding of its prevention, diagnosis and management including fetal reduction.
K.II.13	Ovum Pickup: the target of ovarian stimulation, the criteria for ovulation triggering, timing of ovum pickup, technique and possible complications.
K.II.14	Embryo transfer: requirements and preparation of embryo transfer. Factors affecting endometrial receptivity, implantation window, molecular mechanism of

	implantation and implantation failure. The possible advantages and disadvantages of different timing and number and stages of embryos transferred.
K.II.15	Complications of assisted reproduction: The diagnosis and management of poor response and ovarian hyperstimulation syndrome.
K.II.16	OHSS prevention and treatment.
K.II.17	Counselling women after failure of IVF attempts or RPL.
K.II.18	Preservation of fertility in women who will receive chemotherapy or Embryo cryopreservation, Gametes cryopreservation, Ovarian tissue cryopreservation.
K.II.19	Genetics I: Basics of medical genetics, Genes, Chromosomes and the DNA, Cell cycle and biology, Basis of inheritance, genetic disorders and modes of inheritance:: genetic, chromosomal and multifactorial.
K.II.20	Genetics II: Indications of chromosomal analysis, prenatal diagnosis and preimplantation genetic testing (PGT).
K.II.21	Setting an IVF Lab including incubators, microscopes, laminar flow and micromanipulators.
K.II.22	Gametes: Oocytes (assessment, development & manipulation), Sperms (sources, retrieval: FNA, PESA, MESA, TESA, TESE, sperm preparation methods.
K.II.23	Embryo Culture & Selection: Culture media, culture conditions, embryo morphology, embryo selection: morphological and non-invasive approach
K.II.24	The fundamentals of cryobiology, cryo-preservation & vitrification, and its impact on reproduction, ovarian tissue cryopreservation, sperm cryopreservation and international protocol for freezing, thawing.

INTELLECTUAL & CLINICAL SKILLS (ICS.II)

By the end of this module all candidates should be able to:

ICS.II.1	Obtain relevant medical history about the condition.
ICS.II.2	Perform problem-directed examination for patients presented with different ART indications and interpret patient symptoms and physical findings in terms of their anatomic, pathologic and functional diagnostic and prognostic significances.
ICS.II.3	Select the most appropriate and cost-effective diagnostic laboratory and imaging procedure for each couple and be able to interpret the rational and results of such investigations appropriately
ICS.II.4	Identify problems, prioritize them, and generate a comprehensive treatment plan within a list of "best to better" available options for these problems
ICS.II.5	Perform adequate ovarian stimulation with a proper understanding of related physiology, different protocols adequate targets, and possible complications

ICS.II.6	Practice US follicular scanning as observed during training in the centre and as practiced during the hands-on training in the simulation lab
ICS.II.7	Practice Intrauterine insemination as observed during training in the centre and as practiced during the hands-on training in the simulation lab
ICS.II.8	Practice Ovum pick up as observed during training in the centre and as practiced during the hands-on training in the simulation lab
ICS.II.9	Practice Embryo transfer as observed during training in the centre and as practiced during the hands-on training in the simulation lab
ICS.II.10	Practice Selective fetal reductions as observed during training in the centre and as practiced during the hands-on training in the simulation lab

PROFESSIONAL ATTITUDE (PA.II)

All candidates should be able to:

PA.II.1	Respect patient confidentiality
PA.II.2	Counsel the couple with explanation of relevant Indications of ART, investigations, patient's preparation, ethical and legal aspects of ART with particular attention to cultural and religious background of the couples and their compliance and understanding ability.
PA.II.3	Counsel patients sensitively and explain clearly and openly about various treatment options, complications and adverse effects of various treatments of their condition
PA.II.4	Counsel the couple about the probable success rate in regard to their age, investigations and condition and the indication of ART
PA.II.5	Liaise with colleagues in other disciplines e.g. endocrinologists

Program Module III
Evidence-Based Practice

Module III: This module deals with Evidence-Based Medicine; the rational and methodology, hierarchy of evidence in relation to research methods, critical appraisal of therapy and diagnosis research, systematic reviews and guidelines in reproductive health.

KNOWLEDGE (K.III)

By the end of this module all candidates should be able to describe and discuss:

K.III.1	Definitions and concepts related to evidence-based practice
K.III.2	PICO questions; their formulation and importance
K.III.3	Searching for primary and secondary research articles in the PubMed
K.III.4	Sources of evidence and searching in Evidence-Based Medicine Resources
K.III.5	The Null hypothesis, probability of chance, bias, research methodology and their relation to evidence-based practice.
K.III.6	The randomized controlled trial.
K.III.7	Systematic Reviews and meta-analysis: importance, methodology, the Cochrane library and the menstrual disorders and subfertility group
K.III.8	Evidence-Based Clinical Practice Guidelines: importance, methodology, Adaptation and reproductive medicine guidelines resources (ESHRE, ASRM, NICE, SIGN, GreenTop, etc…)
K.III.9	Sources of evidence and searching evidence-based medicine resources for EB-Clinical Practice Guidelines

INTELLECTUAL & CLINICAL SKILLS (ICS.I.1)

By the end of this module all candidates should be able to:

ICS.III.1	Identify their knowledge gaps and formulate clear clinical PICO questions to help them solve problems they face on their clinical practice
ICS.III.2	Choose from a hierarchy of research design the best design suitable for their clinical queries based on evidence withdrawn from each type of research
ICS.III.3	Construct an effective search strategy for evidence in electronic Pre-appraised EBM resources
ICS.III.4	Acknowledge the importance of systematic reviews and interpret their results and the importance of evidence-based-clinical practice guidelines
ICS.III.5	Search for guidelines in the area of reproductive health in guidelines resources and metasearch engines as the TRIP Database
ICS.III.6	Read the guidelines recommendations, appreciate their importance and obtain evidence for their practice

PROFESSIONAL ATTITUDE (PA.III)

All candidates should be able to:

PA.III.1	Acknowledge the importance of applying evidence in practice
PA.III.2	Be responsible for searching for the best evidence and apply it in patient care

Program Module IV
Endoscopy and Reproductive Surgery

Module IV: This module deals with the use of endoscopic surgery (laparoscopy and hysteroscopy in the area of infertility and related problems.

KNOWLEDGE (K.IV)

By the end of this module all candidates should be able to describe and discuss:

K.IV.1	Role of laparoscopic surgery in infertility and fertility-related conditions: indications, contraindications, advantages and disadvantages.
K.IV.2	Equipment used for laparoscopy including general room set-up, video imaging, insufflation, instruments and energy systems.
K.IV.3	Technique of laparoscopy: consent, anesthesia, laparoscopic entry, creating pneumo-peritoneum, second punctures, pelvic anatomy seen, uterine manipulation, cutting and coagulating, suturing and stapling, suction and irrigation and tissue removal
K.IV.4	Laparoscopic surgery: preoperative preparation, diagnostic laparoscopy, treatment of pelvic adhesions, endometriosis, ovarian endometrioma and ovarian cysts, salpingectomy for hydrosalpinx, salpingostomy for ectopic pregnancy, laparoscopic myomectomy, ovarian diathermy and tubal sterilization and reversal.
K.IV.5	Laparoscopy: complications, postoperative follow-up and dealing with complications.
K.IV.6	Role of hysteroscopic surgery in infertility and fertility-related conditions: indications, contraindications, advantages and disadvantages.
K.IV.7	Equipment used for hysteroscopy including general room set-up, video imaging, distending media, instruments and energy systems.
K.IV.8	Technique of hysteroscopy: consent, timing and endometrial preparation, cervical preparation entry and dilation, prophylactic antibiotics, anesthesia, evaluating the endocervix, evaluating the uterine cavity and management of distending media.
K.IV.9	Hysteroscopic surgery: diagnostic hysteroscopy, outpatient hysteroscopy, resection of fibroid, resection of polyp, division of uterine septum, division of intrauterine adhesions, hydrosalpinx and tubal cannulation.
K.IV.10	Hysteroscopy: complications, postoperative follow-up and dealing with complications.

INTELLECTUAL & CLINICAL SKILLS (ICS.IV)

By the end of this module all candidates should be able to:

ICS. IV.1	Choose the appropriate surgical intervention suitable for the condition at hand
ICS. IV.2	Able to show the basics of laparoscopic and hysteroscopic surgery on a simulator

PROFESSIONAL ATTITUDE (PA.IV)

All candidates should be able to:

PA.IV.1	Respect patient confidentiality
PA.IV.2	Counsel patients sensitively and explain clearly and openly about various surgical treatment options and their possible complications

Detailed Teaching and Learning Plan

Program Module I
Basic Infertility and Reproductive Endocrinology

I.1. Female Reproductive Endocrinology

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 1	**K.I.1.1**	Female reproductive endocrinology: neuroendocrine anatomy and physiology of normal menstruation and hypothalamic–pituitary dysfunction
L 2	**K.I.1.2 - 3**	Hypogonadotrophic hypogonadism, Kallmann syndrome, hyper-prolactinemia and pituitary adenomas
L 3	**K.I.1.4 - 5**	Disorders of growth hormone and thyroid disorders
L 4	**K.I.1.6**	Adrenal dysfunction: Congenital Adrenal hyperplasia, Cushing syndrome, Nelson syndrome and Addison's disease
CD 1	**ICS.I.1.1 - 4**	**Clinical Day/Interactive Seminar with case discussions**
L 5	**K.I.1.7**	Obesity and infertility, ART and management of obesity, including understanding of long-term health risks, metabolic effects and cancer risks.
L 6	**K.I.1.8 - 10**	Premature menopause & premature ovarian insufficiency: causes, diagnostic and therapeutic approach & HRT.
CD 2	**ICS.I.1.5 - 8**	**Clinical Day/Interactive Seminar with case discussions**

I.2. Infertility Basics

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 7	**K.I.2.1 - 2**	The scientific basis related to general infertility problems and the diagnostic approach to an infertile couple
L 8	**K.I.2.3 - 4**	Tests used in the assessment of infertility and the different treatment options for infertility problems (including HSG)
CD 3	**ICS.I.2.1 - 9**	**Clinical Day/Interactive Seminar with case discussions**
L 9	**K.I.2.5**	Basics of ultrasound examination
L 10	**K.I.2.6**	The use of abdominal and transvaginal ultrasound in infertility assessment
WS 1	**ICS.I.2.10**	**Ultrasound in Infertility Workshop (Including HSG & training)**

I.3. Anovulation and PCOS

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 11	**K.I.3.1 - 2**	Anovulation: causes, pathogenesis, insulin resistance, the metabolic syndrome.
L 12	**K.I.3.3 - 4**	Anovulation: presentations and diagnostic tests.
L 13	**K.I.3.5 - 6**	Management of Anovulation in the clinic and protocols of induction.
L 14	**K.I.3.7 - 9**	Laparoscopic ovarian drilling, OHSS & impaired glucose tolerance and insulin lowering drugs.
CD 4	**ICS.I.3.1 - 3**	**Clinical Day/Interactive Seminar with case discussions**

I.4. Other Causes of Infertility and Related Disorders

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 15	**K.I.4.1 - 2**	Other factors of infertility in the female including unexplained infertility
L 16	**K.I.4.3 - 4**	Male factor in infertility
CD 5	**ICS.I.4.1 - 7**	**Clinical Day/Interactive Seminar with case discussions**
L 17	**K.I.4.5 - 7**	Endometriosis I
L 18	**K.I.4.8 - 11**	Endometriosis II
L 19	**K.I.4.8 - 12**	Fibroid and fertility
L 20	**K.I.4.8 - 13**	Hirsutism & hyperandrogenism
CD 6	**ICS.I.4.8 - 13**	**Clinical Day/Interactive Seminar with case discussions**

I.5. Recurrent Pregnancy loss

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 21	**K.I.5.1 - 3**	Recurrent pregnancy loss
L 22	**K.I.5.4 - 5**	Role of ultrasound in diagnosis of early pregnancy
CD 7	**ICS.I.5.1 - 4**	**Clinical Day/Interactive Seminar with case discussions**
TEST		**Module I Assessment Exam**

Program Module II
IVF and Assisted Conception

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

WS2	**ICS.II.6 - 10**	**Hands-on Training in Simulation Lab.**
L 23	**K.II.1-2**	Counselling before IVF and consent in the management of the infertile couple
L 24	**K.II.3**	Patient's selection: Indications of ART, clinical prognostic factors, limitations and ethical and legal aspects of ART
L 25	**K.II.4**	Investigations and preparation of patients for assisted reproduction: hydrosalpinx, fibroids, HIV, Hepatitis B and C screening.
L 26	**K.II.5**	Ovarian stimulation: the scientific basis of follicular development and the role and control of gonadotrophins and the pharmacology of different agents used for ovarian stimulation.
L 27	**K.II.6-7**	Down regulation before ART, ovulatory triggers and coasting
L 28	**K.II.8**	Stimulation protocols I: Long & Short Gn-RH protocols
L 29	**K.II.9-10**	Stimulation protocols II: Gn-RH antagonist cycles
L 30	**K.II.10**	Natural cycle ART & Protocols for frozen embryo transfer.
CD 8	**ICS.II.1 - 5**	**Clinical Day/Interactive Seminar with case discussions**
L 31	**K.II.11**	Luteal support
L 32	**K.II.12**	Complications of assisted reproduction: heterotropic, ectopic and high order multiple pregnancy including fetal reduction
L 33	**K.II.13**	Ovum Pickup
L 34	**K.II.14**	Embryo transfer
L 35	**K.II.15**	Complications of ART: Causes and management of poor response.
L 36	**K.II.16**	Ovarian hyperstimulation syndrome, prevention and management
L 37	**K.II.17**	Counselling after failed IVF
L 38	**K.II.18**	Fertility preservation
L 39	**K.II.19**	Genetics I
L 40	**K.II.20**	Genetics II
L 41	**K.II.21-22**	Lab Procedures & Techniques from the Clinician Point of View I
L 42	**K.II.23-24**	Lab Procedures & Techniques from the Clinician Point of View II
TEST		**Module II Assessment Exam**

Program Module III
Evidence-Based Practice

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 43	**K.III.1 -2**	EBP: concepts and methodology
L 44	**K.III.3 – 4**	Searching for evidence
L 45	**K.III.5**	Research methodology and their relation to EBP
L 46	**K.III.6**	The randomized controlled trial
L 47	**K.III.7 - 8**	Evidence-Based Clinical Practice Guidelines
L 48	**K.III.9**	Sources and searching for evidence and guidelines
TEST		**Module III Assignment**

Program Module IV
Reproductive Surgery

NB: Professional attitude ILOs will be enforced all through the program clinical days and seminars.

L 49	**K.IV.1-3**	Laparoscopic surgery in the treatment of infertility related problems I
L 50	**K.IV.4-5**	Laparoscopic surgery in the treatment of infertility related problems II
L 51	**K.IV.6 -7**	Hysteroscopic surgery in the treatment of infertility related problems I
L 52	**K.IV.8-10**	Hysteroscopic surgery in the treatment of infertility related problems II
WS3	**ICS.IV.1- 2**	**TWO Days Endoscopy Workshop in Simulator Lab**

ASSESSMENT

I- Trainees Assessment

Assessment of the trainees in the program is done on multiple steps and is based on different assessment methodologies.

A- End of Module Exams:

- 2 modular ***written exams***. One at the end of each of module 1 & 2. Each exam is formed of 25 MCQs with one single answer format.
- Assignment at the end of module 3.

B- Summative final assessment at the end of the program formed of:

1. 50 MCQ written exam.
2. 15-25 EMQs written exam
3. An Objective Structured Practical Exam (OSPE) in the format of **either** very short answered questions (VSAQs) 5 questions **OR** stations. Candidates respond to questions on or perform any of the following tasks:
    - Case scenarios
    - HSG film, US, laparoscopy or hysteroscopy pictures
    - Lab results
    - Interpretation of clinical signs
    - Commenting on or performing a clinical skill
    - Report a differential diagnosis
    - Counselling scenario
    - Others; relevant to the topics of reproductive endocrinology and infertility

    Stations can be written or oral.

Pass/Fail criteria

In all exams the initial pass/fail mark is 60% and the final pass mark will be defined after considering the borderline candidates (between 50 – 60%) through the use of a formal standard setting process.

Log book

The candidates will have log book which should be submitted by the end of program. The mark of log book will be distributed on:

- Lectures attendance
- AR unit attendance
- Workshops attendance (**attending all workshops is a must**)
- Completion of the skills in the logbook

Each activity in the logbook should be written completely and signed by the trainer

Each page of the logbook should be stamped by the stamp of the ART unit.

A certificate with all the activities practiced should be obtained from the center, signed and stamped.

Who will sit for the final exam?

Only registered candidates who fulfilled the following requirements:

- Attended at least 70% of the lectures.
- Attended 70% of the case discussions in Cairo
- Attended all the workshops.
- Passed Module I, Module II exams and completed III assignment.
- Completed their logbooks.
- Finished their training and attained a certificate of training from the designated assisted reproductive techniques center.
- Fulfilled the payment of the prescribed fees of both the Evidence Based Women's Health Society and Birmingham Women's Hospital.

All documents will be reviewed by the board and exam committee to get sure of the candidate legibility to sit for the final exam and the board has the right to refuse entry of the exam for any candidate if he/she did not fulfill any of the requirements.

How many chances a candidate has for the final exam?

Every candidate has **3 chances only to sit for the final exam and pass it**.

The three chances are the one with **his/her patch and the next 2 patches only**.

II-Program Assessment

Program Evaluation:

The program will be evaluated through the following approaches

1. **Participants feedback:** all candidates who get enrolled in the program will be asked to submit a formal response to feedback questionnaires; at the end of each training day, at the end of modules, after examinations and finally at program exit. Questionnaire will seek candidates' opinion regarding the effectiveness of teaching and learning opportunities, qualities of instructors, teaching facilities, attainment of learning outcomes and the difficulty of exams.
2. **Instructor feedback:** all instructors participating in the program will be asked to provide structured feedback through surveys and informal discussions about the same items mentioned in the candidates' questionnaires. The timing of instructor feedback will be at the end of each module.
3. **Peer-review:** Professors and expert consultants who are not participating as teachers in the program will be requested to attend practical exam and to provide formal feedback regarding the practical and written exams.
4. **Annual reporting:** Program director and program coordinator will submit an annual program report that define areas of strengths and areas of concerns and propose an action plan for correction of deficits and improvement of performance.
5. **External Evaluation and Accreditation**: the program will be subject for review by CPD accrediting bodies for the purpose of approval and endorsement